

# User Manual

MAN1289 Rev. 5.1 Aug. 2013

# B900/1100-2 BME900/1100-2

SKOPE Gen2: Two Door Chiller



**SKOPE®**  
Refrigeration

B900/1100-2  
BME900/1100-2  
SKOPE Gen2: Two Door Chiller  
Type: B900-2 B90BD  
B1100-2 B39BD/B39SB  
BME900-2 E90BD  
BME1100-2 E39BD

#### User Manual

MAN1289  
Rev 5.1 Aug. 2013

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## 1 Installation

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### Safety First

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Always observe safety precautions when using any electrical appliance. Read these instructions carefully and retain them for future reference.

- When the appliance is used by or near young children or infirm persons, close supervision is necessary, especially to ensure children do not play with it.
- Do **not** use this appliance for other than its intended use.
- Do **not** cover the grilles or block the entry or exhaust of airflow by placing objects up against the refrigeration unit.
- Do **not** probe any opening.
- Only use this appliance with the voltage specified on the cabinet rating label affixed to the refrigeration unit.
- Ensure the chiller has adequate ventilation as this is essential to economical, high performance.
- Be careful not to touch moving parts and hot surfaces.
- For your own safety and that of others, ensure that all electrical work is done by authorised personnel.
- If the power supply flexible cord becomes damaged, it must be replaced by an authorised service agent or similarly qualified person in order to avoid a hazard.
- Ensure all necessary safety precautions are observed during installation or removal of the refrigeration unit.
- The chiller is not designed to be stable while in motion. Use extreme caution when moving or transporting it..

**Caution**

**Never** overload the power supply, which could damage the chiller and product. See the rating label inside the cabinet for the safe power supply and current draw.

**Caution**

**Always** disconnect the cabinet from the mains power supply before cleaning or maintenance.

## Positioning the Cabinet

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**Location** When positioning the cabinet, avoid direct sunlight and warm draughts etc. The cabinet must NOT be situated where it is affected by hot air from adjacent equipment, as this will compromise the airflow and performance of the chiller.

**Ventilation** For efficient operation of the chiller, it is essential that adequate ventilation be provided around the refrigeration unit. The maximum recommended ambient temperature (at place of installation) is 40°C, although the chiller will generally use less power when installed in a cooler location.

**Warning:**

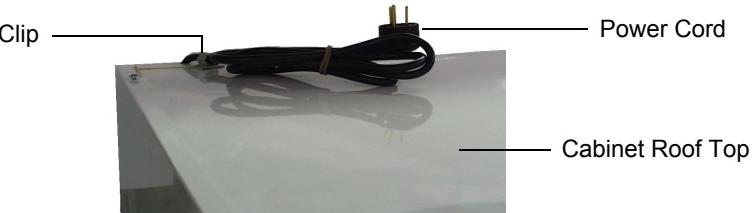
For efficient operation of the chiller it is essential that adequate ventilation be provided around the refrigeration unit.

**Installation Guidelines** When installing the chiller:

- Ensure the cabinet is positioned on a level surface so the door shuts and seals correctly and to prevent the condensate tray from overflowing.
- Allow adequate space for door opening. The self-closing door has an internal torsion bar which is pretensioned at the factory.
- Do not overload the power supply (see the rating label inside the cabinet for power supply and current draw)

**Power Cord** The chiller is supplied with a 3.0m flexible power cord fitted with a 3-pin plug. For transit purposes the power cord is clipped to the roof of the cabinet (see Figure 1 below). For convenience, the cord should be retrieved before the machine is positioned, when walls and partitions may make access difficult.

Figure 1: Flex and Plug



## Fitting the Kick Panel

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For transit purposes the kick panel is packed inside the cabinet, with the electronic controller temporarily attached to the front of the refrigeration unit. Before fitting the kick panel to the cabinet the controller must be attached to the inside of the kick panel.

### To fit the kick panel

1. Loosen the two keyhole screws holding the controller box onto the refrigeration unit. Lift the controller box off the keyhole screws and carefully pull out from the unit compartment.
2. Locate the controller box onto the back of the kick panel, so the two screws in the top of the controller box slot into the keyholes in the kick panel. Tighten the keyhole fixing screws through the top set of slots (see Figure 2 below).
3. Open the cabinet doors wide open (this is to allow fitting of the kick panel). Sit the kick panel over the two corner bottom locating brackets and push on to the two top keyhole fixing screws. Tighten both the screws. Ensure the controller cables are well clear of any sharp objects on the refrigeration unit.

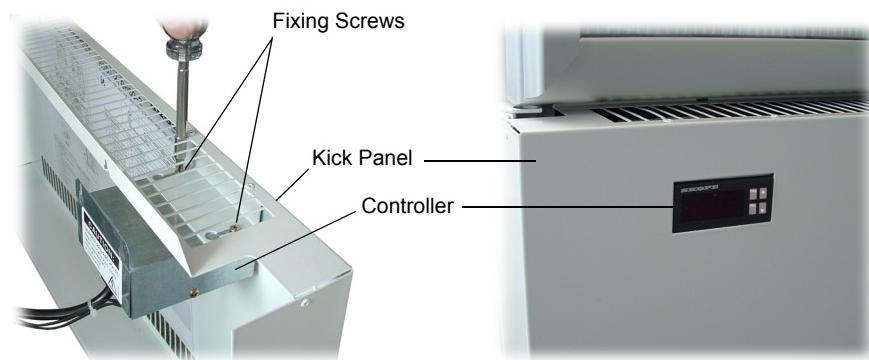


Figure 2:  
Attaching the Electronic Controller

Figure 3:  
Electronic Controller Relocated

## Fitting the Illuminated Sign

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For transit purposes the illuminated sign is packed inside the cabinet.

### To fit the illuminated sign

1. Loosen the four retaining screws on top of cabinet, and fit both the sign side panels over the screws. Slide the panels forward, flush with edges of the cabinet, and tighten the screws.
2. Clip the sign rear panel into retaining slots on the rear of the sign sides (see Figure 5 over page).
3. Fit sign unit by engaging clips into both retaining slots on the front of each side panel, and pull sign unit firmly down. Ensure the two screws in the back of the sign unit fit into slots in the cabinet top angle bracket, and then tighten all the screws.
4. Turn the sign retaining clips, on top of each side panel, to hold sign unit firmly in position (see Figure 4 over page).
5. Connect the sign ENSTO 3 pole plug into the roof top power supply socket.

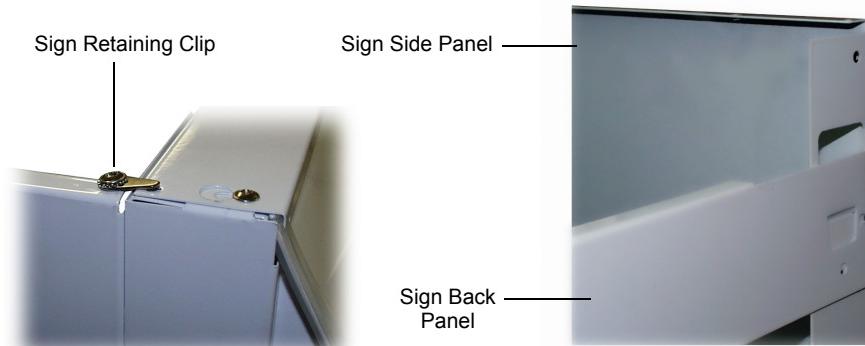


Figure 4: Sign Retaining Clip

Figure 5: Sign Back Panel

## Fitting the Shelves

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Depending on the model, the chiller is supplied with four or five wire shelves which may be positioned at different heights to suit various products. Each shelf is held in place with eight shelf clips, which engage in the shelf support strips. The support strips are marked with a '+' for easy location of shelf clips.

### To fit the cabinet shelves

1. Unpack the wire shelves and shelf clips from inside the cabinet.
2. Establish the desired position for the shelves and securely engage a shelf clip in each of the shelf support strips (see Figure 6 below).
3. Sit the shelves onto the shelf support clips.
  - Remove some product if the shelves are flexing or bending.

Figure 6:  
Shelf Clip

## 2 Operation

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### Automatic Start-Up

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After the cabinet has been positioned in a suitable place, plug it in and check the following activity.

Item	Activity
Lighting	The lights which illuminate the top sign and cabinet interior will initially come on when the machine is turned on. The lights will require a period of time to stabilise following initial start up. On some models (type B39SB) the lights can be turned off and via the <b>UP/AUX</b> button on the electronic controller (see the next page for details).
Electronic Controller	The electronic controller, located in the front kick panel, will either display the internal cabinet temperature or the controller set point. The compressor 'ON' icon will indicate when the compressor is operating (see controller display on next page).
Compressor, Evaporator Fans and Condenser Fan	The compressor, and evaporator and condenser fans should all operate initially. This may be verified by listening for compressor switch on and checking air movement out of the slots in the front kick panel. The internal cabinet air will continue to circulate at all times, as the evaporator fan operates continuously. The compressor should switch off when the cabinet internal temperature reaches approximately +2°C, and switch on again at approximately +4°C. The condenser fan operates continuously. A fan reversing device, reverses the condenser fan motor for a period of time during the compressor 'off-cycle'. This rotation change is to assist with self-cleaning of the condenser coil.

### Loading Product

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The chiller should be left running for 30 minutes before loading with product.  
When loading the cabinet shelves with product:

- Allow air space around all product for even cooling and efficient operation of the chiller.
- Leave an airspace of at least 15mm above product on the top shelf.
- Do not allow products to overhang the front of the shelves as this could effect airflow and prevent the doors from shutting properly.
- Do not exceed a maximum loading of 20kg per shelf.
- Remove some product if the shelves are flexing or bending.

## Electronic Controller

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**Controller Display** Because the controller plays such an important role, it's helpful to know the parts of the faceplate you will use.

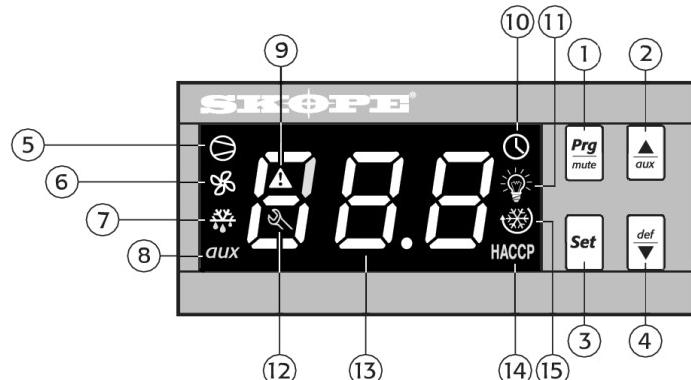
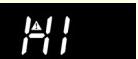


Figure 7: Controller Display

No.	Item	Description
1		<b>Prg / mute:</b> To initiate programme sets, press for 5 seconds. Mutes the audible alarm (buzzer) and deactivates the alarm relay.
2		<b>UP / aux:</b> To scroll settings <b>UP</b> (in programme mode). Press and hold to switch light on or off (some models only).
3		<b>Set:</b> If pressed for more than 2 seconds displays and / or enables changing the temperature setpoint (see page 16).
4		<b>DOWN / def:</b> To scroll settings <b>DOWN</b> (in programme mode).
5		<b>COMPRESSOR:</b> ON when the compressor and condenser fan starts. Flashes when activation of the compressor is temporarily delayed.
6		<b>FAN:</b> n.a.
7		<b>DEFROST:</b> ON when the defrost is activated. Flashes when the activation of the defrost is temporarily delayed due to procedures in progress.
8		<b>AUX:</b> n.a.
9		<b>ALARM:</b> Flashes in the event of alarms.
10		<b>CLOCK:</b> n.a.
11		<b>LIGHT:</b> Some models only.
12		<b>SERVICE:</b> Flashes in the event of malfunctions.
13		<b>DISPLAY:</b> Shows the cabinet temperature.
14		<b>HACCP:</b> n.a.
15		<b>CONTINUOUS CYCLE:</b> n.a.

## Controller Alarms

Code	Display Icon	Alarm Description	Initial Action
	 Flashing	Product HIGH temperature alarm	<ol style="list-style-type: none"> <li>1. Check the cabinet product loading to ensure ventilation slots are not blocked and that product does not overhang the shelves.</li> <li>2. Ensure the cabinet is installed with good refrigeration unit ventilation.</li> <li>3. Check and clean the condenser coil (see pages 12-13).</li> <li>4. Unplug cabinet from the power supply for 1 minute, then reconnect to power supply.</li> </ol> <p>If problems persist, contact SKOPE</p>
	 Flashing	Product LOW temperature alarm	<ol style="list-style-type: none"> <li>1. Check and clean the condenser coil (see pages 12-13).</li> <li>2. Unplug cabinet from the power supply for 1 minute, then reconnect to power supply.</li> <li>3. Check and clean the condenser coil (see pages 12-13).</li> <li>4. Unplug cabinet from the power supply for 1 minute, then reconnect to power supply.</li> </ol> <p>If problems persist, contact an authorised service agent.</p>
	 Flashing	Refrigeration system high temperature pre-warning	<ol style="list-style-type: none"> <li>1. Clean the condenser coil (see pages 12-13).</li> <li>2. Check refrigeration ventilation. Ensure clear airpath at the top and front of the cabinet (to extract hot air). A minimum of 200mm clear space is required in front of the refrigeration unit.</li> <li>3. Ensure the cabinet is installed in a suitable environment.</li> <li>4. Unplug cabinet from the power supply for 1 minute, then reconnect to power supply.</li> </ol> <p>If problems persist, contact an authorised service agent.</p>
	 Flashing	Refrigeration system high temperature shutdown	<ol style="list-style-type: none"> <li>1. Clean the condenser coil (see pages 12-13).</li> <li>2. Check refrigeration ventilation. Ensure clear airpath at the top and front of the cabinet (to extract hot air). A minimum of 200mm clear space is required in front of the refrigeration unit.</li> <li>3. Ensure the cabinet is installed in a suitable environment.</li> <li>4. Unplug cabinet from the power supply for 1 minute, then reconnect to power supply.</li> </ol> <p>If problems persist, contact an authorised service agent.</p>
	 Flashing	Ambient probe fault	
	 Flashing	Evaporator probe fault	
	 Flashing	Condenser probe fault	<p>Unplug cabinet from the power supply for 1 minute, then reconnect to power supply.</p>
	None	Defrost over-time limit	<p>If problems persist, contact an authorised service agent.</p>
	 Flashing	Real-time clock fault	
	 Flashing	Controller E prom error	
	 Flashing	Controller E prom error	
	None	Start defrost request	
	None	End defrost request	None

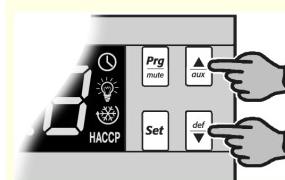
**Temperature Setpoint** The chiller temperature setpoint is factory set at 2.0°C. If necessary the standard setting can be adjusted between 1°C and 3.5°C (see below).

SKOPE do not recommend that the setpoint be changed unless it is absolutely necessary, and then only by small increments at a time.

**To view and adjust the temperature setpoint:**



1. To view the setpoint: press and hold the **SET** key for 2 seconds, until the setpoint value flashes.



2. To adjust the setpoint: press either the **UP** or **DOWN** keys to display the required setpoint value.



3. Press the **SET** key again to memorise the new setpoint value. If this is not done within 60 seconds, changes will be lost and you will need to repeat the above procedure.

## 3 Servicing

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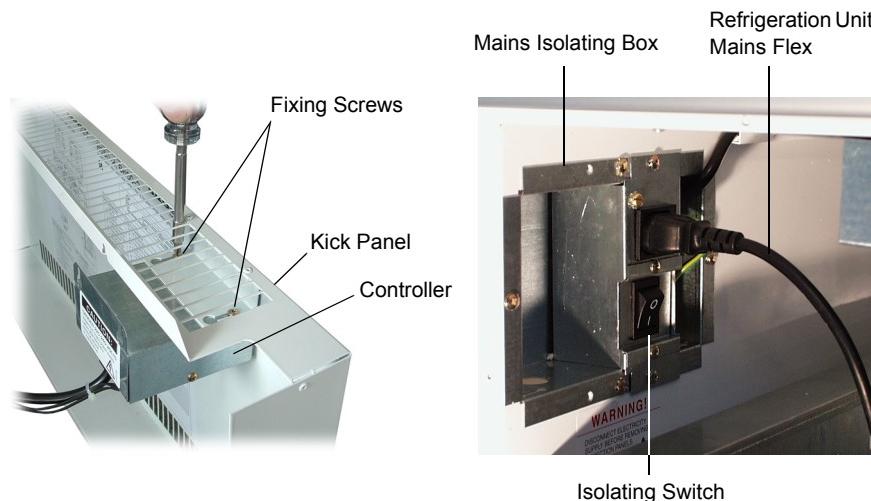
### Isolating Electrics

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The refrigeration unit can be totally isolated from the mains power, irrespective of whether the refrigerator is plugged into the mains. To achieve this, switch off the mains isolating switch and disconnect the refrigeration unit mains flex

#### To isolate the cabinet

1. Disconnect cabinet from the power supply.
2. Remove cabinet kick panel, by loosening the screws along top back flange of the kick panel. Raise the kick panel vertically to clear keyholes off the screw heads, then tilt panel forward and lift up and off the bottom fixing brackets. Access to top screws can be made easier by opening the cabinet doors.
3. Remove the controller from the kick panel, by loosening the two top fixing screws through the top slots in the kick panel.
4. Switch off isolating switch, and unplug refrigeration unit mains flex from the mains isolating box.



**Figure 8:**  
Removing the Controller

**Figure 9: Mains Isolating Box**

## Cleaning

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When necessary, wipe the interior and exterior of the cabinet with a damp cloth. Ensure the cabinet is disconnected from the mains power supply before cleaning. Periodic cleaning of the condenser coil is also recommended.

**Condenser coil** The condenser coil MUST be kept clean for efficient and reliable operation.

Clean the condenser coil with a brush and vacuum cleaner regularly. The condenser coil is located behind a side baffle, on the right hand side of the refrigeration unit.

### To access the condenser coil

1. Isolate the cabinet from the mains power supply and remove the front kick panel (see "Isolating Electrics" on page 12).
2. Remove the cabinet wiring junction box by loosening both the end keyhole fixing screws.
3. Remove the two screws holding the side baffle to the condenser coil and carefully pull the baffle out from the unit.
4. The condenser coil can now be accessed for cleaning. Clean the condenser coil with a brush and vacuum cleaner.
5. Refit the side baffle and cabinet wiring junction box.
6. Refit the cabinet kick panel.
7. Reconnect the cabinet to the mains power supply.

### Caution:

Disconnect the cabinet from the mains power supply before cleaning the condenser coil.

## Lighting

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Depending on the cabinet model, interior lighting will be provided by a fluorescent tube on the centre pillar, or by two fluorescent tubes on either side pillar of the cabinet. On some models (type B39SB) the lights can be turned off and on via the **UP/AUX** button on the electronic controller (see page 9 for details).

- Interior Side Light** Each side light houses one 28 Watt T5 fluorescent tube, which may be replaced without removing shelves or product from the cabinet. To replace the fluorescent tube:
1. Disconnect the cabinet from the mains power supply.
  2. Remove the side light diffuser, by compressing the back section of the diffuser until it disengages from the aluminium housing and then push the diffuser back (see Figure 10 below).
  3. The fluorescent tube can now be removed. Revolve the tube until the pin position allows withdrawal.
  4. When refitting the new fluorescent tube ensure the printing on the tube is at the bottom, as the tube orientation is important.
  5. When refitting the diffuser, engage the back section into the housing, and then compress and snap the front section of diffuser back into place working down the full length of the light.

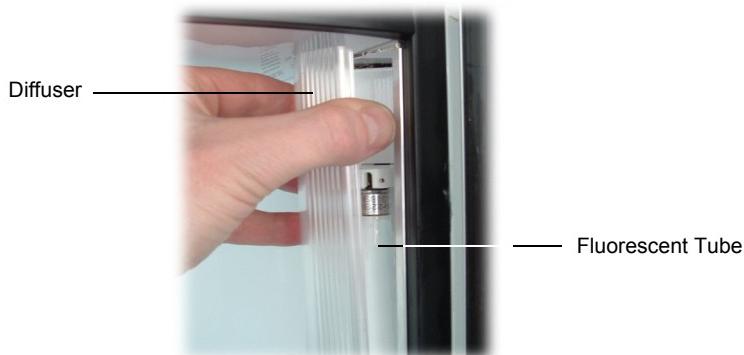


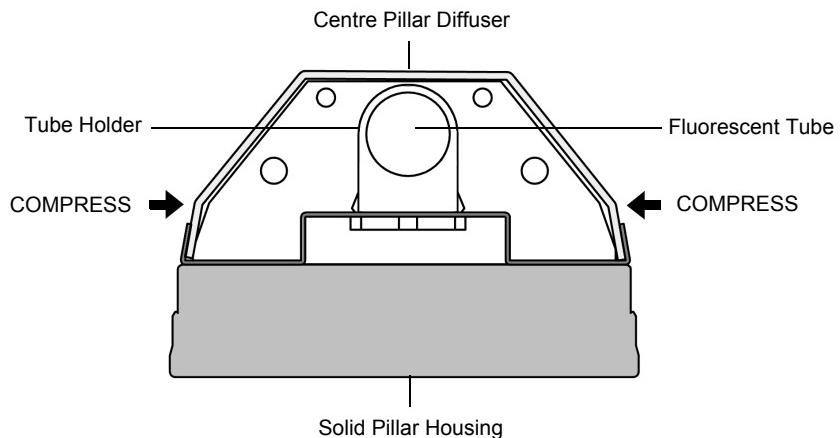
Figure 10: Replacing the Fluorescent Tube

- Centre Pillar Light** The cabinet centre pillar light houses a 28 Watt fluorescent tube ( $\varnothing 16\text{mm} \times 1150\text{mm}$ ).

### To change the centre pillar fluorescent tube

1. Isolate the cabinet from the mains power supply (see “Isolating Electrics” on page 12).
2. Remove the centre pillar diffuser by compressing both sides of the diffuser so that it disengages from the pillar housing.
3. The fluorescent tube can be removed, by revolving the tube until the pin position allows withdrawal.
4. When refitting the new fluorescent tube ensure the printing on the tube is at the top, as the orientation of the tube is important. The replacement tube must be of the same wattage and colour rendering as the original.

- To refit the diffuser; engage one side of the diffuser into the pillar housing, and compress and clip the diffuser back into place working progressively down the full length of the light.



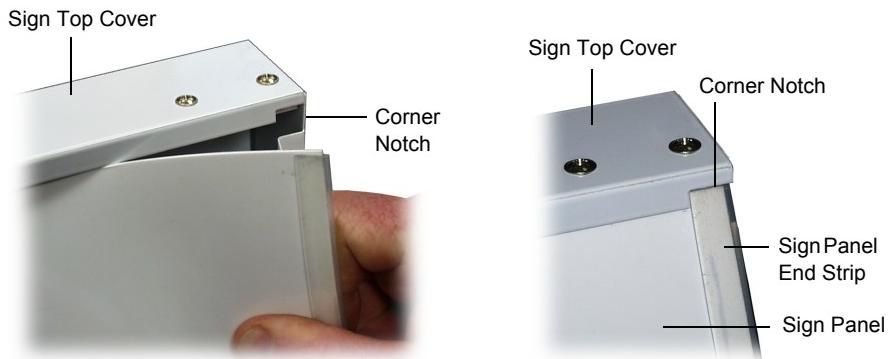
**Figure 10: Centre Pillar Light**

**Sign Light** The illuminated sign unit is located on top of the cabinet and houses a 28 Watt fluorescent tube ( $\varnothing 16\text{mm} \times 1150\text{mm}$ ).

#### To change the sign fluorescent tube

To access the fluorescent tube, the curved sign panel must first be removed from the sign unit. No tools are required for this procedure.

- Isolate the cabinet from the mains power supply (see “Isolating Electrics” on page 12).
- Start at one of the top corners of the sign unit and pull the sign panel out from under the sign top cover (see figure 10 on next page).
- Work along the length of the sign unit, pulling the sign panel out as you go.
- Carefully remove the sign panel away from the sign unit.
- The fluorescent tube can now be accessed for replacement (see figure 11 on page 30).



**Figure 11: Removing Sign Panel**

**Figure 12: Sign Corner Detail**

## Troubleshooting

Complaint	Possible Cause	Repair
1. Cabinet not operating and no controller display:	<ul style="list-style-type: none"> <li>Loss of power supply.</li> </ul>	<ul style="list-style-type: none"> <li>Check mains power supply and check the cabinet isolating switch is turned on (see "Isolating Electrics" on page 12).</li> </ul>
2. Cabinet interior light not operating:	<ul style="list-style-type: none"> <li>Failed fluorescent tube.</li> <li>Controller alarm.</li> <li>Not switched on</li> </ul>	<ul style="list-style-type: none"> <li>Replace fluorescent tube (see "Lighting" on page 14).</li> <li>Determine cause and eliminate ("Controller Alarms" on page 10).</li> <li>Switch on at controller (some models only, see "Controller Display" on page 9)</li> </ul>
3. Power consumption is higher than expected:	<ul style="list-style-type: none"> <li>Unit operating too hot.</li> <li>Cabinet door is opened excessively.</li> </ul>	<ul style="list-style-type: none"> <li>Clean the condenser coil (see "Cleaning" on page 13). Ensure the chiller is installed with good ventilation around the refrigeration unit and within its maximum operating temperature (see "Positioning the Cabinet" on page 5).</li> <li>Keep door open for minimum time.</li> </ul>
4. Product is too warm and spoiling:	<ul style="list-style-type: none"> <li>Restricted cabinet airflow.</li> <li>Temperature setpoint to too warm.</li> </ul>	<ul style="list-style-type: none"> <li>Ensure product is not blocking airflow slots and there is air space around all the product.</li> <li>Adjust setpoint ("Temperature Setpoint" on page 11).</li> </ul>
5. Warm cabinet temperatures and/or compressor operating for long periods (more than 1 hour):	<ul style="list-style-type: none"> <li>Blocked condenser.</li> <li>Poor refrigeration unit ventilation.</li> </ul>	<ul style="list-style-type: none"> <li>Clean the condenser coil (see "Cleaning" on page 13).</li> <li>Ensure the cabinet is installed with good ventilation around the refrigeration unit and within its maximum operating temperature (see "Positioning the Cabinet" on page 5).</li> </ul>

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